

Online
Training

Boiler Operations Maintenance and
Steam Management



Skills
International
for Training & Consulting

سكيز
الدولية
للتدريب والاستشارات



Course Plan

Course Objectives:

Upon completion of this course, participants will have an understanding of the chemistry of boiler water treatment for scale, corrosion, and carryover control, with external and internal water treatment the participant will have a strong understanding of efficiency calculation, boiler inspection either destructive or non-destructive test. Participant will have also strong understanding of all control loops of boiler operation.

Who Should Attend?

- ✓ Steam Plant Operators
- ✓ Operations Personnel
- ✓ Maintenance Engineers / Managers
- ✓ Safety Officers
- ✓ Boiler Inspectors

Training Methods:

- Online Video material
- Presentation
- Live Interactive discussions.
- Course presenter will make extensive use of case examples and case studies

Course Outline:

Day One

Introduction

- Fire tube boilers
- Water tube boilers

Boiler basics and steaming process

- Component of boiler
- Mass and energy balance
- Routing of combustion gas inside the boiler.

Heat transfer

- Conduction
- Convection
- Radiation
- Super-heated steam
- Latent heat
- Sensible heat

Review of combustion Fundamentals

- Excess air & flue gases relation

Burners

- Selection of burners
- Atomizing of burners
- Oil burner
- Gas burner
- NOx burner

- Reduction of NO_x emission

Day Two

Boiler operation

- Burner shutdown when steam pressure c.o.p is reached
- Boiler shutdown procedures
- Short-term shutdown
- Shutdown for cold Restart
- Safety system fuel and air supply control system
- Procedures for selection of burner control system

Basic instrumentation

- Pressure measurement
- Level measurement
- Temperature measurement
- Flow measurement

Day Three

Boiler control application

- Level drum control
- One element control
- Two element control
- Three element control

- Dearator control
- Level control
- Temperature control

Fuel/air Ratio control

- Series limited control
- Parallel limited control
- Lead lag firing control
- Oxygen trim control

Main header control

Day Four

Water treatment

- External water treatment process
- ion exchange process
- Dearation
- Evaporation
- Internal water treatment
- lime soda process
- phosphate treatment
- feeding of chemical continuing treatment

Blowdown

- Intermittent and continuous blowdown
- Control of blowdown
- Blowdown heat recovery

Day Five

Efficient boiler operation

Efficiency calculation

- Direct method
- Indirect method
- Heat transfer calculation
- Boiler & combustion systems hazards codes
- Boiler inspection
- ✓ Destructive test
- ✓ Non-destructive test
- Prevention of boiler explosions / implosions NFPA8502
- Troubleshooting
- Steam Management

Training Fees Details

Course Duration

5 Days

Pre - Schedule

11 – 15 August 2024

Venue

Dubai – The H Hotel

Training Fees Per
Person

KWD 1250 (One Thousand Two Hundred Fifty)

Course Fees Include

- Curriculum and Training Handout
- Completion Certificates
- Registration`s Fees
- Five Star Lunch